REMARKS

Entry of the foregoing, re-examination and reconsideration of the subject matter identified in caption, as amended, pursuant to and consistent with 37 C.F.R. §1.111, and in light of the remarks which follow, are respectfully requested.

In the present Amendment, claim 1 has been amended to recite a controlled flow of a liquid, a vapor or a gas mixture comprising a solvent and a non-solvent for the polymeric material. This amendment is supported by the disclosure, for example, page 11, lines 23-29. New claim36 has been added. Support for claim 36 can be found in the present specification at page 4, lines 1-2. Claims 6 and 8 were previously canceled. No new matter has been added.

Upon entry of the Amendment, claims 1-5, 7 and 9-36 will be all the claims pending in the application.

I. Response to Rejection under 35 U.S.C. § 102(b)

Claims 1, 7, 10, 14-16, 18 and 26-35 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,093,197 to Howard et al. Applicants respectfully traverse the rejection for the reasons of record and the following additional reasons.

Howard et al. discloses a process for forming fibers or filaments comprising extrusion of a mixture of polyolefin, filler and plasticizer from a die, to form fibers or filaments, and extracting at least a portion of the extractable plasticizer *afterwards,* to provide the desired porosity (Abstract; col. 1, lines 63-68). As explained at col. 3, lines 47-51 of Howard et al., the "extraction" serves to impart porosity to the fiber by at least partially removing the plasticizer material *after* fiber formation.

It is noted that Howard et al.'s process for forming a porous fiber involves two separate steps, i.e., an extrusion step and a subsequent extraction step. In essence, Howard et al.'s process is analogue to that of WO 98/34977 as described at page 2, lines 15-20 of the present

specification. As such, the presently claimed process is distinguishable from Howard et al. by providing a simplified process in which porosity is achieved in a single extrusion step. There is no need for a subsequent extraction or stretching step any more (see page 4, lines 1-2 of the present specification).

The Office Action asserts that "the process as claimed requires two steps" (page 3, lines 2-3 of the Office Action).

Applicants wish to point out that though the phase inversion according to the presently claimed invention proceeds in two different stages, the actual processing conditions applied by man involve one single step, i.e., extrusion of a fiber stream into a coagulation bath. On the other hand, Howard et al. requires an additional man-driven extraction step following the extrusion step, to obtain fibers with the desired porosity. For at least this reason, the presently claimed method is different from that described in Howard et al. Moreover, the presently claimed method is a significant improvement.

The Office Action appears to assert that Howard et al. discloses providing porosity *during* extraction, relying on the description at col. 5, lines 38-60 of Howard et al. (page 5, lines 1-8 from the bottom).

Applicants wish to point out that Howard et al. discloses in the cited passages, directing a hot gas stream against the extrudate at an angle designed to *attenuate* the filaments or fibers being extruded. Attenuation has, however, little to do with porosity. This is for instance exemplified by col. 5, lines 61-62 of Howard et al., where attenuation is accomplished by mechanical tension. Moreover, Howard et al. describes at col. 5, lines 65-66, that *"It is preferred to perform attenuation of filaments after the filaments have been subjected to the extraction step."*

Furthermore, present claim 1 recites utilizing a spinneret to allow a controlled flow of a liquid, a vapor or a gas *along an exterior of the nascent fibre*, which reflects a parallel flow of the liquid, vapor or gas. Applicants submit that an embodiment involving directing a hot gas stream *at an angle* as described in Howard et al. does not constitute parallel coextrusion. Howard et al. refers in Examples 1 and 7 to the die according to U.S. Patent No. 3,947,537. It is submitted that Figures 1 and 2 in combination with the description at col. 2, lines 32-35 and 50-52 of US '537 show that parallel coextrusion of a stream next to the nascent fiber is not achieved. Howard et al. and US '537 focus on attenuating the extrudate at the die opening.

The Office Action also refers to the description at col. 6, lines 45-50 of Howard et al. (page 5, line 1 from the bottom – page 6, line 3). Applicants wish to point out that this passage deals with the extraction step which, as detailed above, only takes place after formation of the fibers, and is thus different from formation of porous *fibers* in a singular extrusion step.

In summary, Howard et al. does not teach or suggest providing porosity to a *nascent* fiber; rather, it teaches first forming a fiber, and then inducing porosity (by removing or "extracting" a component present in the fiber already formed). The measures taken in Howard et al. to provide attenuation also do not accidentally lead to the formation of porous fibers either, as discussed above. It requires parallel flow to establish porosity in a controlled manner. Otherwise, entering a coagulation bath would still lead to the formation of substantially closed fibers.

The Office Action further asserts that Howard et al. is not limited to the embodiment of a device with a hot gas stream directed at an approximately perpendicular angle against the extrudate, and that the angel of Howard et al. could be easily tailored to meet the limitations of applicant (page 3, lines 6-12 of the Office Action).

Applicants wish to point out that "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." See MPEP 2131 citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). As set forth above, Howard et al. does not disclose or teach all the features recited in present claim 1, and thus does not anticipate the present claims under 35 U.S.C. § 102.

The Office Action notes that no particular angle has been defined in Howard et al., other than that described in the examples therein.

As discussed above, in Howard et al., the angle is "designed to attenuate the filaments or fibers being extruded" (col. 5, lines 47 - 49). The gas stream is directed at an angle upon the extrudate to stretch it and to attenuate the fiber thickness as to form the extrudate into filaments of controlled diameter.

Hence, even if a skilled person might modify the angle with which the gas stream is directed upon the extrudate upon leaving the orifice in Howard et al., he would not be motivated to change the setup to a parallel gas or liquid stream as presently claimed, for he would no longer achieve the attenuation desired in Howard et al. Applicants also wish to point out that although mathematically correct, "parallel flow" is not merely "tailoring the angle in Howard et al."

The gas stream in Howard et al. does not comprise any means to control porosity, and Howard et al. merely advocates the use of hot air (col. 2, lines 35 - 36) to control fiber thickness. Therefore, even if, *arguendo*, the "angle" in Howard et al. constitutes a parallel setup, it would still be unsuccessful in achieving porosity. It is once again noted that the motivation for a skilled person to attempt to control porosity has to come from the present application, a hindsight approach which is impermissible.

Nonetheless, to expedite prosecution, claim 1 has been amended to recite "utilizing a spinneret to allow a controlled flow of a liquid, a vapor or a gas mixture comprising a solvent and a nonsolvent for said polymeric material, along an exterior medium ...."

In view of the foregoing, Applicants respectfully submit that present claim 1 as well as dependent claims 7, 10, 14-16, 18 and 26-35 is novel and patentable over Howard et al., and thus the rejection should be withdrawn.

II. Response to Rejections under 35 U.S.C. § 103(a)

a. Claims 17 and 22 were rejected under 35 U.S.C. § 103(a) as being obvious over Howard et al. in view of the "EPA Technical Bulletin on Zeolite," the EPA Technical Bulletin. Applicants respectfully traverse the rejection.

Howard et al. is discussed above in Section I. The EPA Technical Bulletin is cited against claims 17 and 22 merely as teaching that "zeolite is synthesized ... to predict the properties of the zeolite and to make hydrophobic zeolite" (page 10, lines 5-7 of the Office Action). As the EPA Technical Bulletin does not rectify the above noted deficiencies of Howard et al., the combination of Howard et al. and the EPA Technical Bulletin still would not result in the subject matter of claim 1, from which claims 17 and 22 depend indirectly and directly. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection.

b. Claims 2-5, 9 and 11-13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Howard et al. in view of WO 93/12868 to Koops et al. Applicants respectfully traverse the rejection.

Howard et al. is discussed above in Section I. Koops et al. is cited as disclosing a method for the production of hollow fiber membranes with the aid of a one-step process using a spinning head which has three concentrically arranged outlet openings (page 11, lines 15-17 of

the Office Action). As Koops et al. does not rectify the above noted deficiencies of Howard et al., the combination of Howard et al. and Koops et al. still would not result in the subject matter of claim 1, from which claims 2-5, 9 and 11-13 depend. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection.

c. Claims 20 was rejected under 35 U.S.C. § 103(a) as being obvious over Howard et al in view of U.S. Patent No. 5,786,428 to Arnold et al. Applicants respectfully traverse the rejection.

Howard et al. is discussed above in Section I. Arnold et al. is cited merely as disclosing separation systems which use adsorbent as the basis for conducting enantioresolution of optically active amino acids and peptides and methods for using the adsorbent (page 15, lines 1-3 of the Office Action). As Arnold et al. does not rectify the above noted deficiencies of Howard et al., the combination of Howard et al. and Arnold et al. still would not result in the subject matter of claim 1, from which claim 20 depends. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection.

d. Claim 21 was rejected under 35 U.S.C. § 103(a) as being obvious over Howard et al. in view of U.S. Patent No. 3,493,497 to Pretorius et al. Applicants respectfully traverse the rejection.

Howard et al. is discussed above in Section I. Pretorius et al. is cited merely as disclosing a chromatographic separation process which can be adapted to produce very rapid separations in a given system (page 17, lines 3-4 of the Office Action). As Pretorius et al. does not rectify the above noted deficiencies of Howard et al., the combination of Howard et al. and Pretorius et al. still would not result in the subject matter of claim 1, from which claim 21 depends. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection.

e. Claim 24 was rejected under 35 U.S.C. § 103(a) as being obvious over Howard et al. in view of U.S. Patent No. 6,454,943 to Koenhen. Applicants respectfully traverse the rejection.

Howard et al. is discussed above in Section I. Koenhen is cited merely as disclosing a self-supporting capillary membrane obtained by extruding the hollow fiber using an extruder and guiding the reinforcing fibers through a spinneret of the extruder (page 18, lines 12-19 of the Office Action). As Koenhen does not rectify the above noted deficiencies of Howard et al., the combination of Howard et al. and Koenhen still would not result in the subject matter of claim 1, from which claim 24 depends. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection.

f. Claims 19 and 23 were rejected under 35 U.S.C. § 103(a) as being obvious over Howard et al. in view of U.S. Patent No. 3,344,177 to Hensley et al. Applicants respectfully traverse the rejection.

Howard et al. is discussed above in Section I. Hensley et al. is cited merely as disclosing a purification method to obtain a substantially pure water insoluble aromatic dicarboxylic acid product from lower purity crude products (page 20, lines 14-16 of the Office Action). As Hensley et al. does not rectify the above noted deficiencies of Howard et al., the combination of Howard et al. and Hensley et al. still would not result in the subject matter of claim 1, from which claims 19 and 23 depend. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection.

g. Claim 23 was rejected under 35 U.S.C. § 103(a) as being obvious over Howard et al., in view of WO 00/02638 to Boggs et al. Applicants respectfully traverse the rejection.

Howard et al. is discussed above in Section I. Boggs et al. is cited merely as disclosing membranes for removing organic compounds that have been added to a biological fluid which

include a polymeric matrix and a particulate material immobilized within the matrix (page 22, lines 1-3 of the Office Action). As Boggs et al. does not rectify the above noted deficiencies of Howard et al., the combination of Howard et al. and Boggs et al. still would not result in the subject matter of claim 1, from which claim 23 depends. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection.

III. New Claim

Newly added claim 36 depends from claim 1 and thus is patentable over the cited references for at least the reasons set forth above.

Further, as noted above, Howard et al. discloses a process involving two separate steps, an extrusion step and a subsequent extraction step. On the other hand, claim 36 specifically recites that there is no additional step after (ii) (the extrusion step). For this reason additionally, claim 36 is patentable over Howard et al.

IV. Conclusion

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned at his earliest convenience.

The Director is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17 and 1.20(d) and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

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